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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,476	07/27/2001	Tinku Acharya	42390P11959	1096

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EXAMINER

SHERALI, ISHRAT I

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,476

Applicant(s)

ACHARYA, TINKU

Examiner

Sherali Ishrat

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 USC 112 first paragraph as failing to comply with description requirement.

Regarding independent claims 1, 8 and 15, in lines 2-3, recite "multiplying frequency domain coefficients for the decompressed image by scale factor". The specification on page 7, lines 7-10 shows in the form of abstract "let us extend this 2-dimensional DCT signal $F(u,v)$ of size $N \times N$ to another two dimensional DCT signal $F'(u,v)$ of size $M \times M$ by simply multiply $F(u,v)$ by a scaling factor". However the specification fails to describe how scaling factor is derived or obtained and what is the relation ship between the scale factor and upscaled decompressed image. Claims 2-7, 9-14 and 16-20 are dependent on claims 1, 8 and 15 respectively therefore they are also rejected.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Reisch et al. (US 5,168,375).

Regarding claim 1, 8 and 15, Reisch discloses upscaling a decompressed image (See Reisch, figure 1 [blocks 64, 106 and 108] Reisch shows figure 1, blocks 64, 106 and 108, upsclaing a decompressed image by sharpening and interpolation) comprising:

multiplying frequency domain coefficients for the decompressed image by a scale factor (See Reisch, col. 17, lines 42-46, "multiplying in the frequency domain DCT coefficients with filter kernel", in the system of Reisch filter kernel corresponds to the scale factor because by multiplying DCT coefficients with filter kernel Reisch is upscaling the resolution [magnification] of decompressed image as shown in figure 1 and col. 17, lines 37-40, Reisch shows filtering is accomplished to obtain sharpened image [upscaled image] and in figure 1 [blocks 64, 106 and 108] Reisch shows sharpening and interpolation decompressed image)

to achieved a desired amount of image upscaling (See Reisch, figure 1 [blocks 64, 106 and 108] , col. 17, lines 37-40, Reisch shows filtering is accomplished on the image i.e to upscale the resolution [sharpening] of decompressed image for desired amount); and

padding the frequency domain coefficients with sufficient zeros to provide the desired scaling (See Reisch, figure 3, blocks 128 and 134, col. 17, lines 17-20, Reisch

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shows inserting additional rows and columns to the DCT array of coefficient and padding the additional rows and columns with zeros for desired scaling of the image).

Regarding claim 2, 9 and 16, Reisch discloses frequency coefficients comprise DCT coefficients (See Reisch, col. 17, 16-17, frequency corresponds to DCT coefficients).

Regarding claim 3, 10 and 17, Reisch discloses inverse transforming the scale and padded transform coefficients to provide a spatial domain image (See Reisch, figure 3, blocks 128 I and 134, Reisch shows inverse transform of DCT coefficients and padding additional rows of DCT with zeros).

Regarding claims 4 and 11, Reisch discloses scaling comprise integer scaling (See Reisch, figure 1 and figure 3, Reisch upscaling of DCT coefficients of resolution [sharpening] and insertion of additional rows and columns to DCT array can be integer scaling)

Regarding claims 5, 12 and 18, Reisch transforming the scaled padded frequency domain coefficients to provide a spatial domain image (See Reisch, figure 3, blocks 128 I and 134, Reisch shows transforming the scaled padded frequency domain coefficients to provide a spatial domain image [block 134]).

Regarding claims 6, 13 and 19, Reisch disclose decompressed image was decompressed from block based specification (See Reisch, figure 3, blocks 128F, 128I and 134, Reisch is obtaining decompressed image [block 134] from DCT coefficient [block 128 I] and DCT is based on block based specification).

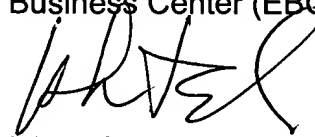
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Regarding claims 7, 14 and 20, Reisch discloses block based specification compliant compressed image comprise at least one of JPEG specification compliant (See Reisch, figure 3, col. 2, lines 55-60, Reisch shows JPEG compliant DCT circuitry).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherali Ishrat whose telephone number is 703-308-9589. The examiner can normally be reached on 8:00 AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

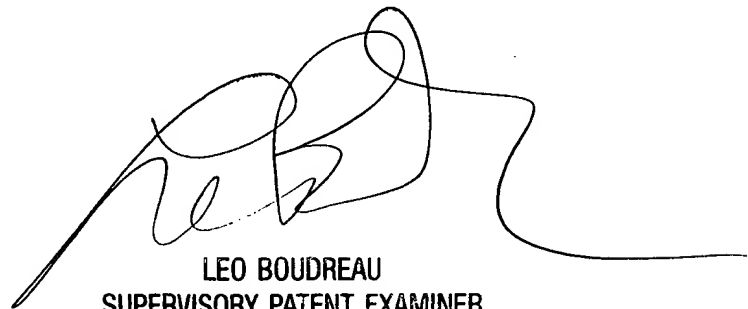


Ishrat Sherali

Patent Examiner

Group Art Unit 2621

June 26, 2004



LEO BOUDREAU
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